

**ICS 6A Discrete Mathematics for Computer Science**

**Fall 2003**

**Quiz 6**

**November 26**

*Instructor: Sandy Irani*

1. Use mathematical induction to show that 3 divides  $n^3 + 2n$  whenever  $n$  is a nonnegative integer.

2. Use mathematical induction to show that for any non-negative integer  $n$ ,

$$1^2 + 2^2 + \cdots + n^2 = \frac{n(n+1)(2n+1)}{6}.$$